

# Laying up a better diet to prepare basketball players

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In international collaboration between health researchers at Bath and Westmont College, California, has provided new nutritional advice for basketball players hoping to improve their performance for next season. Pictured left to right: Professor Gregg Afman (Westmont) and Dr James Betts (Bath)

As players in the NBA wind down after a hectic schedule of matches at the close of season, coaches and strategists will be looking ahead to work out how improve on performances for 2014/15.

Now an international collaboration of sports scientists, involving researchers from our Department for Health and colleagues at Westmont College, California (US), have joined forces to develop new nutritional guidance that could help players preparing for big games.

Their research points towards how sodium bicarbonate 'baking powder', and carbohydrate supplements could be useful in countering the physical challenges players face playing competitive basketball. From dribbling,

to lay-ups and slam-dunks, basketball requires frequent bursts of intense physical exertion, interspersed with active recovery. It's thought that better nutritional guidance could improve their performance and offset fatigue over the course of a game.

In a recent research paper, published in the leading *International Journal of Sport and Exercise Nutrition (IJSNEM)*, the researchers outline how much of what is known about the limitations to physical performance in basketball comes from lab-based tests, therefore is not reflective of the challenges of a real game.

Dr James Betts from our Department of Health explains: "Almost all the [nutritional advice](#) available to intermittent or team-sports players in general, and to basketball players in particular, actually comes from laboratory-based studies using continuous fixed-intensity exercise on a treadmill or cycle ergometer.

"Through our study we questioned whether it is a fair assumption that these guidelines would truly apply to basketball players during the unique physiological challenges posed in their sport."

The researchers argue that the current nutritional advice for players also fails to take into account that basketball players are far from average in size and weight. An average player in the NBA towers above most, at 6ft 7, and weighs over 220 pounds (around 15 stone).

Through their study, they enlisted 27 well-trained male [basketball players](#), and monitored their vital stats and performance throughout a game and in high-intensity shuttle runs.

Watch the protocol in action, filmed at the University of Bath – the experimenter in the video is Neal Dinan, one of the study authors:

Their results showed how swallowing carbohydrate shortly before exercise caused hypoglycaemia – or low blood sugar – during the first quarter and resulted in poorer sprinting ability and lay-up shooting performance. However, sprint times were actually faster in the final quarter when either carbohydrate or sodium bicarbonate had been ingested before exercise, although neither directly resulted in any increased skill from players.

Lead-author, Professor Gregg Afman from Westmont College, added: "We looked at how nutritional practices, carbohydrate and sodium bicarbonate, may enhance basketball skill during a simulated game.

"We also validated the testing protocol to be a valid measure of the metabolic costs of a basketball game. Our results show that within the context of this design, ingestion of carbohydrate and/or [sodium bicarbonate](#) shortly before basketball has the potential to offset fatigue and thus improve aspects of performance late in exercise, although both supplements require balanced consideration of individual tolerance prior to competition to minimize acute negative side-effects."

**More information:** To access a copy of the paper, 'Effect of carbohydrate or sodium bicarbonate ingestion on performance during a validated basketball simulation test', published in the International Journal of Sport Nutrition and Exercise Metabolism see [opus.bath.ac.uk/39097/](https://opus.bath.ac.uk/39097/)

Provided by University of Bath

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